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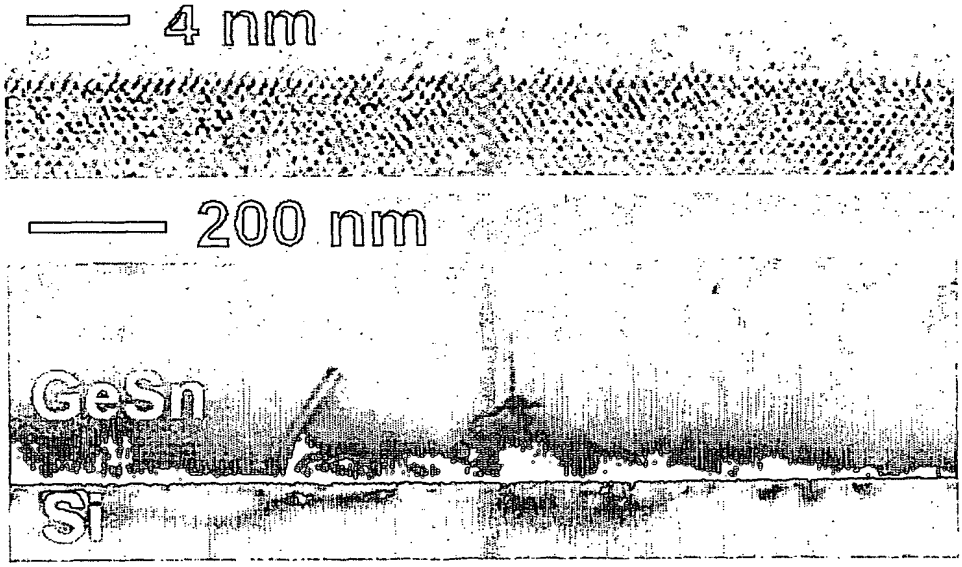
(54) Title: GESN ALLOYS AND ORDERED PHASES WITH DIRECT TUNABLE BANDGAPS GROWN DIRECTLY ON SILICON



(57) Abstract: A method for depositing an epitaxial Ge-Sn layer on a substrate in a CVD reaction chamber includes introducing into the chamber a gaseous precursor comprising SnD4 under conditions whereby the epitaxial Ge-Sn layer is formed on the substrate. the gaseous precursor comprises SnD4 and high purity H2 of about 15-20 % by volume. The gaseous precursor is introduced at a temperature in a range of about 250 °C to about 350 °C. Using the process device-quality Sn-Ge materials with tunable bandgaps can be grown directly on Si substrates.

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FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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